OCEANAIRE
"providing a better climate.....anywhere"

PWC series

Portable Water-Cooled Spot Cooler

ENGINEERING, INSTALLATION AND SERVICE MANUAL

c UL us

MADE IN THE USA

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FORWARD

This manual provides the user with basic details for the installation and operation of the OceanAire PWC spot cooler. It is recommended to read and fully understand the instructions outlined within this manual, before operating the PWC unit.

As with all commercial air conditioning equipment, it is recommended to have the PWC sized and installed by a licensed specifying engineer and contractor, in accordance with all local and state codes. The length of service received can be extended by following the installation and preventive maintenance instructions.

NOTICE

In our ongoing process of continuous improvement, the items and procedures described in this manual are subject to change without notice. Please note model and serial number of the PWC unit when contacting the factory.

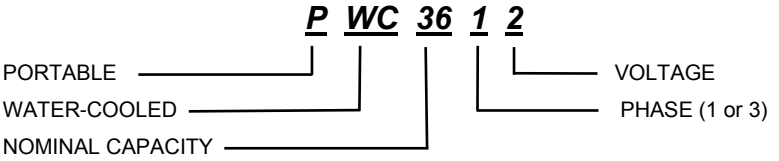
GENERAL INFORMATION

The OceanAire PWC is a portable water-cooled air conditioner designed for permanent or temporary spot cooling applications. The entire air conditioning unit has been built in an attractive sheet metal cabinet, equipped with heavy-duty casters for mobility. All PWC models come with a 10-foot power cord for electrical connection and added mobility in service. These spot-coolers are designed to direct air to specific areas or objects through a discharge grille located on the upper-front of the unit. The PWC models range in cooling capacities from 12,000 BTU/HR to 60,000 BTU/HR to satisfy most space cooling requirements.

The PWC is a self-contained unit with the entire cooling system (blower assembly, electrical, refrigerant, and waterside components), neatly arranged in a gray polyester powder coated metal cabinet. When connected to the proper source of electrical power, a 24-volt thermostat controls the PWC unit to provide the desired level of comfort and cooling.

A wide variety of accessories and factory installed options are available for the PWC units allowing for improved performance and versatility.

NOMENCLATURE



CAPACITY RATING

12.....12,000 BTU/HR
18.....18,000 BTU/HR
24.....24,000 BTU/HR
36.....36,000 BTU/HR
60……..60,000 BTU/HR

WARRANTY CARD

It is important that the warranty card be filled out completely and returned to the factory within fourteen (14) days of installation of the unit in order to receive the benefits of the warranty.

SPECIFICATIONS

PWC

MODEL: PWC	1211	1811	2412	3612	3632	3634	6012	6032	6034
Cooling Capacity [2]	12,000	18,000	23,950	36,100	36,100	36,100	60,100	60,100	60,100
Voltage (Volts/Phase) at 60Hz [1]	115/1		208-230/1		208-230/3	460/3	208-230/1	208-230/3	460/3
Unit Amps [6]	8.1	11.3	9.9	12.0	9.3	4.7	23.7	16.5	6.3
Unit Watts [6]	930	1300	2100	2700	2700	2700	5000	5000	5000
In Rush Current (Amps)	56	69	55	100	80	48	165	149	75
Plug Type	5-15P	5-15P	6-20P	6-20P	L15-20P	L16-20P	6-30P	L15-30P	L16-20P
EER [4]	12.9	13.8	11.4	13.4	13.4	13.4	12.0	12.0	12.0
Compressor HP	1	1 1/2	2	3	3	3	5	5	5
Compressor RLA	9.5	12.3	10.5	13.6	8.8	5.0	27.6	18.1	9.0
Compressor LRA	50	63	48	83	77	35	158	137	62
Evap CFM [3]	400	600	810	1200	1200	1200	1950	1950	1950
Evap Motor HP	1/8	1/8	1/3	1/3	1/3	1/3	1	1	1
Evap Motor Watts	180	210	350	375	375	375	550	550	550
Dimension E (in.)	18	21 1/2		29 1/2			32 3/4		
Dimension F (in.)	5 1/2	6		6			6		
Dimension G (in.)	3 1/2	4 1/2		4 1/2			4 1/2		
Cond Water Flow (GPM) at 60°F inlet	**0.75**	**1.1**	**1.55**	**2.2**	**2.2**	**2.2**	**3.8**	**3.8**	**3.8**
at 85°F inlet	**3**	**4.5**	**6**	**9**	**9**	**9**	**15**	**15**	**15**
Cond Coil Pressure Drop-PSI	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Water Valve Pressure Drop PSI	2.0								
Water Valve Connection	3/8 MF			5/8 MF					
Drain (Return) Connection	3/8 MF			5/8 MF					
Condensate Pump (ALL UNITS)	20 Ft Lift - 3/8 MF Connection On Unit - DRAIN								
Sound Level [5]	52	57	60	62	62	62	69	69	69
R-410A Charge Oz.	14	18	16	24	24	24	52	52	52
(A) Height with Casters (in.)	31 1/2	37 1/2		50-1/4			52-1/2		
(D) Height Without Casters (in.)	28 1/2	34 1/2		45			46-1/2		
(B) Width (in.)	20 1/8	24 1/4		28 1/4					
(C) Depth (in.)	13 1/8	13		18			39		
Net Weight (lb.)	125	155	170	275		305	470		500
Shipping Weight (lb.)	145	175	190	305		335	510		540
Shipping Volume (cu.ft.)	9	12		23			46		

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

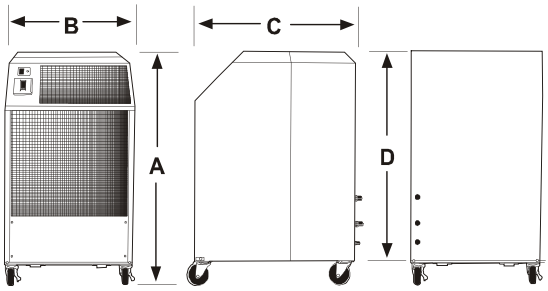
NOTES

1. Dedicated Circuit and Time Delay fuse or circuit breaker are recommended
2. Cooling Capacity is total BTUH at 80ºDB/67º WB return air, with 85° EWT and 105° LWT
3. CFM with free discharge
4. Cooling EER is determined at high fan speed
5. Sound Pressure, dB at 5 feet, commercial operation
6. Amps & Watts at 208 Volts (208-230 V Models)

COOLING AMBIENT* **OPERATING RANGE 65º TO 105º**

* May COOL down to 55º if equipped with hot gas bypass (factory installed)

MADE IN THE USA



NOT APPROVED FOR OUTDOOR USE

WARRANTY

ALL OCEANAIRE PRODUCTS ARE COVERED BY THE OCEANAIRE LIMITED WARRANTY

1 YEAR ON THE FULL PRODUCT

PLUS, 4 ADDITIONAL YEARS FOR THE COMPRESSOR (RESTRICTIONS APPLY)

WATER COOLED

STANDARD FEATURES

CABINET

The PWC-Series cabinet is constructed of 18 gauge steel with a gray polyester powder coated finish that will compliment any decor. The entire cabinet is insulated with sound- absorbing insulation for cool, quiet comfort. All units come equipped with handles and swivel casters for portability and convenient set-up.

ELECTRONIC THERMOSTAT

All PWC units are equipped with a non-programmable electronic thermostat. When power is connected to the unit, the thermostat will control the unit to cool a space to the desired temperature. The thermostat is also capable of controlling the fan to operate automatically (when needed) or continuously. To protect the compressor from short-cycling, there is a built-in time delay in the thermostat. In the event of a power outage, all thermostat settings are saved, and the unit will re-start automatically.

FAN SPEED CONTROL

A two position rocker switch, located next to the thermostat, provides the user with the option of running the evaporator fan at high-speed or low-speed.

CONDENSATE PUMP

All PWC units come equipped with an Automatic Condensate Pump that removes the condensate. The pump discharges through a 3/8 male flare connection located on the back of the unit. The pump is capable of pumping to a 20-foot height, to handle almost any installation requirement.

CONDENSATE ALARM LIGHT

On the front of all PWC models, there is a Condensate Alarm Light (RED) located near the thermostat. The light indicates a condensate pump over-flow condition where the pump is either disabled, or incapable of removing the condensate water, and must be serviced.

FILTERS

All PWC units are equipped with a washable filter at the air intake. An electrostatic mesh air filter is located behind the evaporator return air grille to filter the air before it is cooled, keeping the coil free from dust build-up. The filter can be easily removed and cleaned.

HIGH PRESSURE SAFETY SWITCH

Located on the back of the PWC unit is a manual re-set high pressure switch, used for the protection of the compressor in the event that the condenser water supply is turned off. If the condensing pressure exceeds the limit setting, the switch cycles off the compressor, while the evaporator fan remains running, The high pressure switch is also wired **in series** with the condensate pump. If a failure occurs with the operation of the pump circuit, the HP switch will open. Once the water interruption/condensate pump failure has been corrected, turn the unit off, reset the switch by depressing the **red RESET button** on the back of the unit, and restart the unit.

POWER CORDS

All PWC units come with power cords, convenient connection and portability. All models, except for the 3-phase and 5-ton units, are equipped with LCDI for added safety devices.

APPLICATIONS

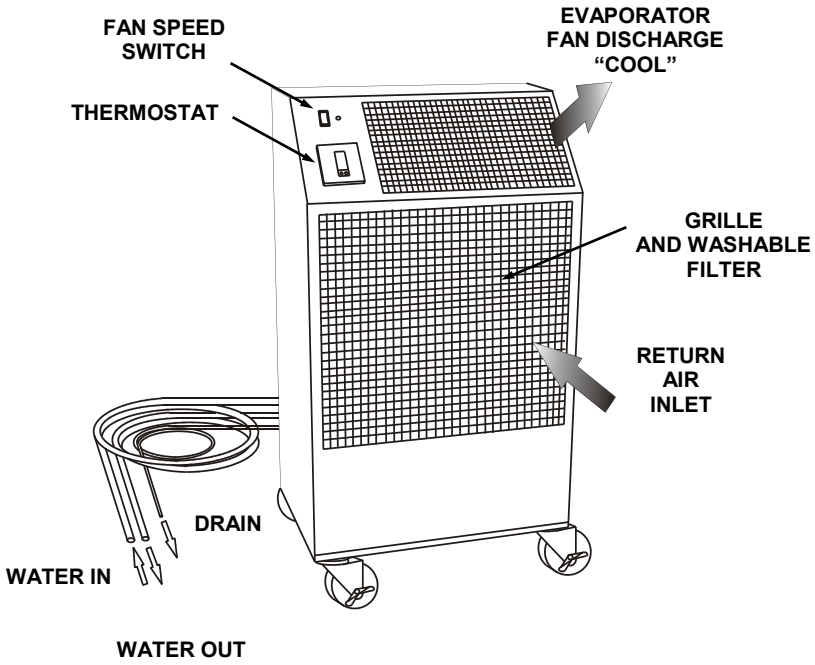
SPOT COOLER

The PWC can be used in an open environment to cool specific objects or "spots". Spot Cooling is a convenient and economical way to provide air conditioning where cooling the entire space is impractical. Cool air is discharged from the unit and is directed where it is needed. Nozzle kits can be used to improve direction of the cooling airflow.

ROOM AIR CONDITIONER

One feature of the PWC is it operates as a room air conditioner because water is used as the means for heat rejection. The major advantage of water-cooled air conditioning is the convenience of connecting water hoses, or lines, as compared to the installation of condenser air ducts used for air-cooled portables. A variety of hose kit lengths are available that can be used for connecting to a water supply and drain, while providing portability within the conditioned space.

PWC—OPERATION / DESCRIPTION



ELECTRICAL CONFIGURATION

All PWC Series units are equipped with a standard 10-foot long service cord with plug configurations and receptacle requirements as shown in this chart. PWC1211, PWC1811, PWC2412 and PWC3612 units come with **LCDI** (Leakage Current Detection & Interruption) devices that serve as a means of electrical protection.

CAUTION

DO NOT USE THE LCDI AS AN ON/OFF SWITCH FOR THE UNIT

All 3-phase models are equipped with locking plugs for added connection reliability. Refer to the chart below for plug and receptacle details for all PWC models.

A DAMAGED LCDI POWER SUPPLY CORD MUST BE REPLACED WITH A NEW POWER SUPPLY CORD OBTAINED FROM OCEAN-AIRE, AND NOT REPAIRED

UNIT/MODEL	PLUG CONFIGURATION	RECEPTACLE
115 VOLT PWC1211 PWC1811	15A-125 VOLT NEMA 5-15P	NEMA 5-15R
208-230 VOLT SINGLE PHASE PWC2412 PWC3612	20A-250 VOLT NEMA 6-20P	NEMA 6-20R
208-230 VOLT SINGLE PHASE PWC6012	30A-250 VOLT NEMA 6-30P	NEMA 6-30R
208-230 VOLT 3-PHASE PWC3632	20A-250 VOLT NEMA L15-20P	NEMA L15-20R
208-230 VOLT 3-PHASE PWC6032	30A-250 VOLT NEMA L15-30P	NEMA L15-30R
460 VOLT 3-PHASE PWC3634 PWC6034	20A-460 VOLT NEMA L16-20P	NEMA L16-20R

USE OF EXTENSION CORDS

CAUTION

FOR MODELS PWC1211 AND PWC1811 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 15 AMPS @ 115 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODELS PWC2412 AND PWC3612 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODEL PWC6012 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS WITH GROUNDING-TYPE ATTACHMENT PLUG AND GROUNDING TYPE CONNECTOR (LOAD FITTING)*

FOR MODEL PWC3632 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 250 VOLTS, 3 PHASE*

FOR MODEL PWC6032 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 30 AMPS @ 250 VOLTS, 3 PHASE*

FOR MODELS PWC3634 AND PWC6034 *AN EXTENSION CORD CAN BE USED PROVIDED IT IS RATED AT LEAST 20 AMPS @ 600 VOLTS, 3 PHASE*

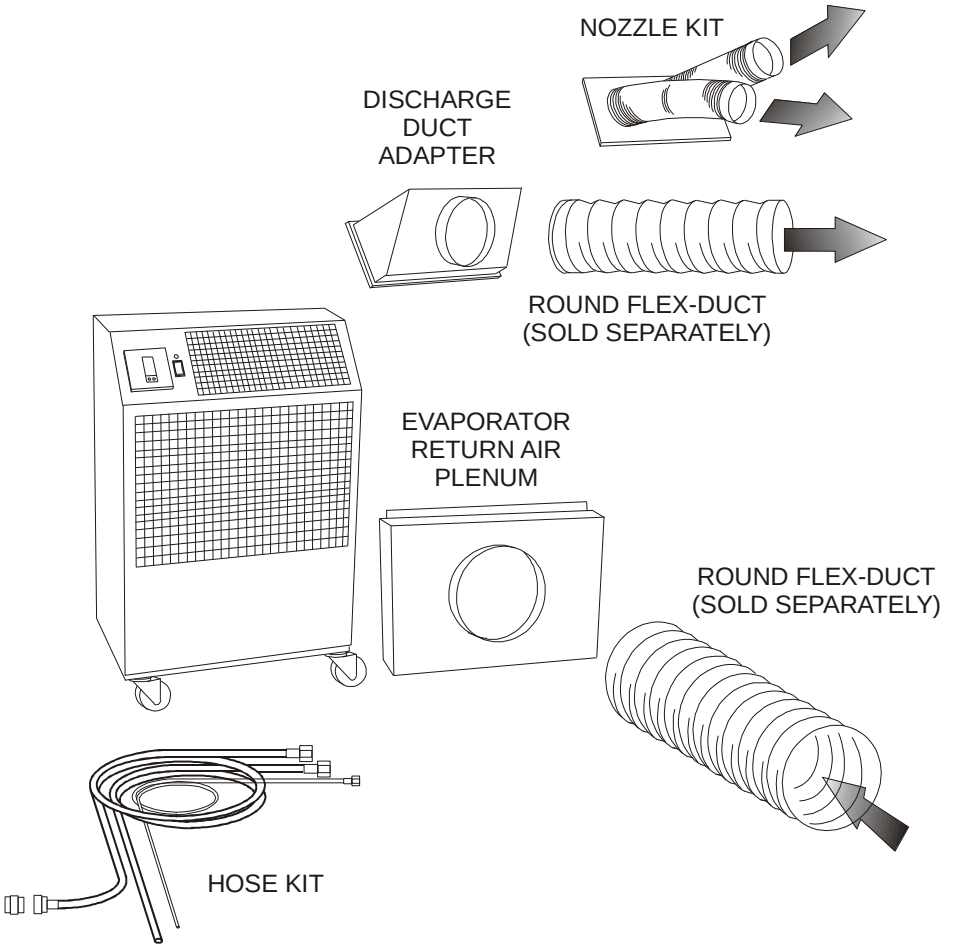
SPECIAL NOTICE—THREE PHASE OPERATION

Models PWC3632, PWC3634, PWC6032 and PWC6034

All three-phase models are equipped with a three-phase monitor for added compressor protection. The phase monitor, located in the control box, has multi-color LED that reports status. The monitor protects the compressor from reverse operation, phase loss and low voltage situations. Further description of the three-phase monitor is located in the electrical section of the manual.

NOTICE - DO NOT OPERATE ANY THREE-PHASE UNIT BY BYPASSING THE MONITOR, THIS WILL VOID THE WARRANTY

PWC ACCESSORIES



PWC ACCESSORIES

NOZZLE KIT

NK-1	(2 X 4-Inch)	PWC12
NK-2	(2 X 6-Inch)	PWC18, 24
2NK-3	(2 x 8-Inch)	PWC36
NK-3	(2 X 8-Inch)	PWC60

EVAPORATOR RETURN AIR PLENUM

DEP-10	(10-Inch Round)	PWC12
DEP-12	(12-Inch Round)	PWC18, 24
DEP-16	(16-Inch Round)	PWC36, 60

DISCHARGE DUCT ADAPTER

DDA-6	(6-Inch Round)	PWC12
DDA-10	(10-Inch Round)	PWC18, 24
2DDA-16	(16-inch Round)	PWC36
DDA-16	(16-Inch Round)	PWC60

HOSE KIT

HK-1	10FT	PWC 12, 18, 24
HK-2	25FT	PWC 12, 18, 24
HK-5	40FT	PWC 12, 18, 24
HK-3	10FT	PWC 36, 60
HK-4	25FT	PWC 36, 60
HK-6	40FT	PWC 36, 60

ACCESSORIES

DISCHARGE AIR NOZZLE KIT ASSEMBLY

The optional discharge nozzle kits are used to direct the conditioned air to a specific target area. By concentrating the airflow, the nozzles increase the air velocity towards production lines to cool personnel and/or equipment. In server rooms, the nozzles can be used to direct the airflow through the rack to remove the hot air from the area of the equipment.

NK-1 for model PWC12, with (2) 4-inch diameter nozzles with an approximate compressed length of 15 inches. The approximate extended length is 21 inches.

NK-2 for models PWC18, PWC24 with (2) 6-inch diameter nozzles with an approximate compressed length of 22 inches. The approximate extended length is 32 inches.

2NK-3 for model PWC36 with (2) 8-inch diameter nozzles with an approximate compressed length of 20 inches. The approximate extended length is 29 inches.

NK-3 for model PWC60, with (2) 8-inch diameter nozzles with an approximate compressed length of 20 inches. The extended length is approximately 29 inches.

The nozzle kits come pre-assembles with the nozzles secured to a mounting plate, and with edge guards. By removing the PWC discharge grille, one can insert the nozzle kit into the opening without the use of tools.

Nozzle Kits

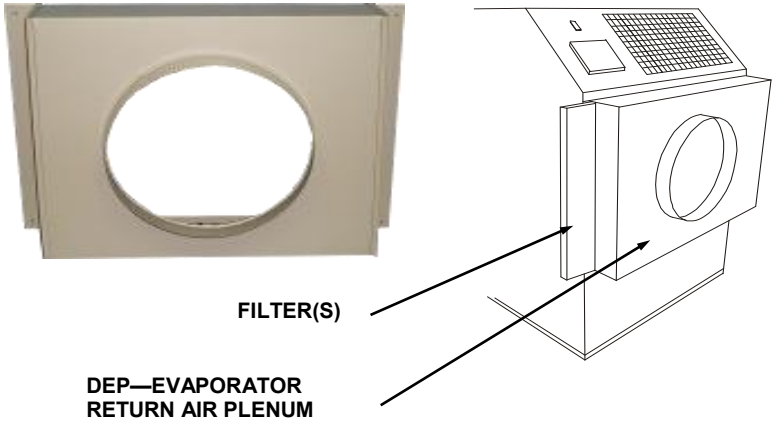
ACCESSORIES

EVAPORATOR RETURN AIR PLENUM

Evaporator return air plenums are available for installations where it is required to duct air to the inlet of the evaporator. The evaporator return air plenums allow the user to connect round duct (flexible or rigid) to the return air intake to reduce air noise and increase the number of options for solving difficult cooling problems. The plenum attaches to the front of the unit, replacing the return air grille. Refer to the table below for configuration and application information

DEP-10 for PWC12 transitions the return air opening to 10-inch round duct.
DEP-12 for PWC18 and PWC24 transitions the return opening to a 12-inch round duct.
DEP-16 for PWC36 and PWC60 transitions the return opening to a16 inch round duct.

NOTE—When a DEP is installed, it is recommended to set the evaporator blower speed to high, to avoid evaporator coil freeze-up.



Plenum Kit Duct/ Flange	PWC12	PWC18	PWC24	PWC36	PWC60	FILTERS
DEP-10	✓					(1) 10”X20”X1”
DEP-12 12 inch		✓	✓			(1) 16”X24”X1”
DEP-16 16 inch				✓	✓	(1) 15”X30”X1” (1) 10”X30”X1”
Maximum Equivalent Feet	25	50	50	50	100	
Est. External Static Pressure	(.20)	(.25)	(.25)	(.25)	(.50)	

ACCESSORIES

Discharge Duct Adapter

Discharge duct adapters are available for applications where ducted evaporator discharge is required. The adapters can be easily installed on the unit without fasteners, and be installed for either vertical or horizontal ducting. The standard discharge grille is removed and the DDA is attached in the grille opening.

DDA-6 for PWC12, converts the evaporator discharge to a 6-inch diameter round duct.
DDA-10 for PWC18 and PWC24, converts the evaporator discharge to a 10-inch diameter round duct.
2DDA-16 for PWC36, converts the evaporator discharge to a 16-inch diameter round duct.
DDA-16 for PWC60, converts the evaporator discharge to a 16-inch round duct.

When used in conjunction with the evaporator return air plenum, DEP, the unit can provide closed-loop cooling to and from a given space without the influence of any outside air.

NOTE—When a DDA is installed, it is recommended to set the evaporator blower speed to high, to avoid evaporator coil freeze-up.

Adapter Model	Round Duct Size	PWC12	PWC18	PWC24	PWC36	PWC60
DDA-6	6-inch	✓				
DDA-10	10-inch		✓	✓		
2DDA-16	16-inch				✓	
DDA-16	16-inch					✓
Maximum Approx Equivalent Feet		25	50	50	50	100
Maximum E.S.P		.15	.25	.25	.25	.50

ACCESSORIES

Hose Kit

Hose kits are available in lengths of 10, 25, and 40 feet. Each hose kit allows for convenient installation of the PWC, while allowing for portability within the allowable space.

NOTE —When using these hoses in applications with water pressures exceeding 50 PSIG, a water pressure reducing valve must be installed in the water supply line prior to the hose kit; otherwise warranty on the hose kits will be void.

All hose kits have FEMALE flare connectors to match the MALE flare fittings on the units (see chart below). The WATER IN connector consists of a 3/4" hose barb. WATER OUT and DRAIN (condensate) have no fittings, and can be fed to a sink or permanent drain. When using a hose kit, avoid sharp corners, hot water pipes and kinking to assure proper water flow of the supply, return, and drain lines.

Included with the hose kit is a sink/faucet adapter

Hose Kit	Length	Flare Conn IN-OUT-DRAIN	PWC12	PWC18	PWC24	PWC36	PWC60
HK-1	10 ft	3/8 3/8 3/8	✓	✓	✓		
HK-2	25 ft	3/8 3/8 3/8	✓	✓	✓		
HK-5	40 ft	3/8 3/8 3/8	✓	✓	✓		
HK-3	10 ft	5/8 5/8 3/8				✓	✓
HK-4	25 ft	5/8 5/8 3/8				✓	✓
HK-6	40 ft	5/8 5/8 3/8				✓	✓

SPECIAL ORDER ITEMS

In some applications, units can be manufactured with optional components for added performance and longevity. Below are a few of the PWC options that are available.

Consult your distributor for pricing and availability.

CUPRO-NICKEL CONDENSER

When chemically treated water, salt water or brine, is used in the condenser coil, it is recommended that the PWC be equipped with a 90/10 Cupro-Nickel condenser coil.

HIGH PRESSURE WATER VALVE

For applications where water supply pressures exceed 150 psig, a high pressure water regulating valve can be installed in the PWC. Valves designed for use with up to 350 psig water inlet pressure are available.

HERESITE TREATED EVAPORATOR COIL

For use in chemically corrosive environments, the PWC can be manufactured with a Heresite® dipped evaporator coil for improved coil life.

HOT GAS BYPASS VALVE

In applications where low evaporator temperatures may occur, an optional hot gas bypass valve can be installed to regulate the evaporator temperature. The bypass valve feeds refrigerant (hot gas) into the evaporator to avoid low ambient freeze-ups.

MARITIME WATER VALVE

Cast naval bronze body with MONEL parts. MONEL is a “natural alloy” and is highly resistant to corrosion.

TOWER UNITS

In applications where the PWC is connected to a closed-loop condenser water circuit, a unit can be built for direct water connection **WITHOUT** a water valve.

INSTALLATION INSTRUCTIONS

RECEIVING—INSPECTION

Upon receiving your unit, inspect the packaging for any damage. All units are shipped on a skid, and packaged in a triple-wall carton for added protection.

BEFORE INSTALLING

Check the unit for any damage. All OceanAire products are thoroughly inspected at the factory and carefully packaged. If any damage is evident, contact OceanAire ***IMMEDIATELY.***

ELECTRICAL REQUIREMENTS

Check the nameplate located on the back of the unit to confirm the proper power is available for the unit. **Refer to "Specifications"** section for voltage and amperage requirements. For proper NEMA receptacles, refer to "Electrical service plug configuration". When using extension cords, use the proper gauge cord, and check cord voltage to the unit.

TIME DELAY FUSES/CIRCUIT BREAKERS ARE RECOMMENDED

WARNING—OPERATING THE UNIT ON IMPROPER VOLTAGE WILL VOID THE WARRANTY

ACCESSORIES

Verify that all accessories are correct for the model, and are installed in accordance with all instructions.

START-UP

Install the unit in accordance with all local and state building codes, and install all accessories. Allow for a clearance around the unit for future maintenance and/or service. Level unit and lock casters, when available. Connect power and test the LCDI on the power cord (if available). Power up unit, via thermostat and check for proper operation. Refer to Thermostat Operation for more details.

THERMOSTAT OPERATION

FAN

When the power is connected, the LCD screen on the thermostat will illuminate. Pressing the FAN button once, will turn on the evaporator fan blower. To turn the blower off, push the FAN button once again.

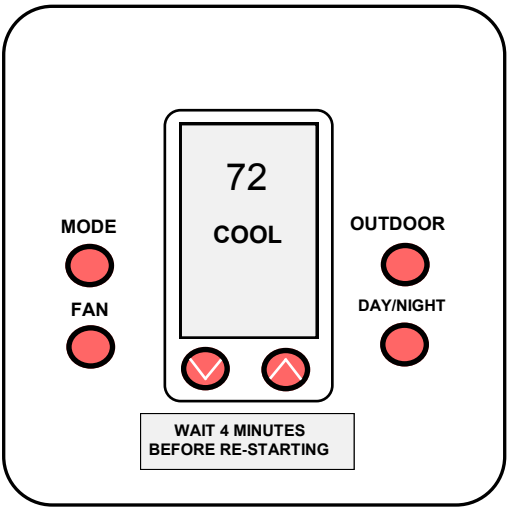
COOLING MODE ✱

To operate unit for cooling, push MODE button to display COOL in the window.

Push down arrow button multiple times to lower set point to desired temperature.

The display will show the set-point temperature for 5 seconds, then it will return to room temperature display.

After a slight pause, the fan motor and compressor will start, beginning the cooling cycle. Remember, the set-point must be lower than the room temperature for the unit to start.



The OUTDOOR and DAY/NIGHT buttons are not used and do not effect unit operation.

This is a cooling only thermostat. Select the temperature you want by pressing the ▲ or ▼ buttons. The word COOL and the temperature set-point is displayed for 5 seconds.

To change display to Celsius, simultaneously press the ▲ and ▼ buttons. Press them again to change back to Fahrenheit.

No batteries are required. In the event of a power failure, when the power is restored the thermostat will continue operating as if the power had never been off.

Compressor short cycle protection is built-in to the thermostat. A 4-minute time delay will protect the unit.

WATER VALVE ADJUSTMENT

All PWC units come equipped with an automatic pressure regulated water valve which controls the condenser water flow rate. The water valve will open when the system is running, and will adjust the water flow rate based on the temperature of the supply water.

In some cases, water temperatures can cause the valve to open and close at a high rate, causing a “chattering” condition in the water supply line. In these cases, it is recommended that the water valve be adjusted.

1. Disconnect the unit power.

2. Remove the unit back panel and locate the water regulating valve in the lower right region of the unit.

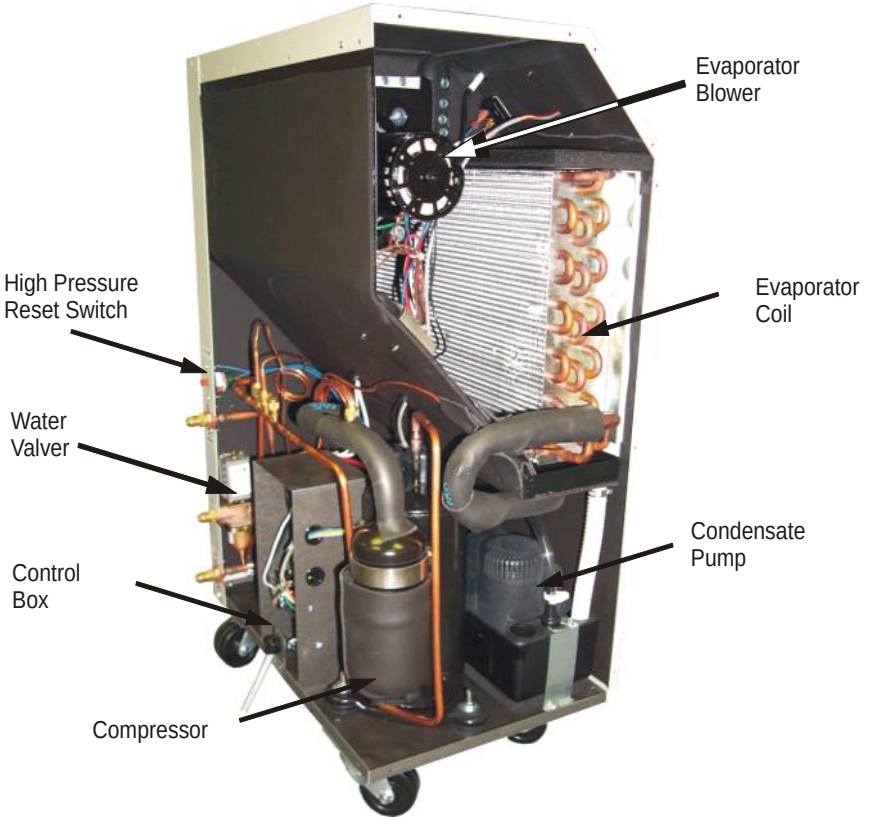
3. Locate the water valve adjustment screw. At the top of the valve there is a square -shaped adjustment screw.

4. Turn the adjustment screw 1/4 turn **CCW** to raise the low side operating pressure...or...**CW** to lower the low side operating pressure.

5. Re-install the back panel and turn the unit on.

Water Valve
Adjustment Screw

PWC INTERIOR



REPLACEMENT PROCEDURE FOR PARTS

IT IS RECOMMENDED THAT ALL OCEANAIRE UNITS BE SERVICED BY A LICENSED TECHNICIAN

WARNING—TO AVOID INJURY, DISCONNECT UNIT POWER PRIOR TO SERVICING

A. FAN MOTOR

1. Remove cabinet left-side panel (when looking at the front of the unit).

2. Evaporator fan motor—disconnect evaporator motor wires from evaporator fan contactor and fan speed rocker switch.

3. ***For all model sizes 12, 18, 24, and 36***, remove the screws securing motor and inlet-ring to blower housing (all screws are external and visible), and remove blower wheel-motor assembly. Remove the blower wheel set screw and disassemble the blower wheel from the motor shaft and remove the motor.
For model size 60—loosen blower wheel shaft set screw, and remove the screws securing the motor mount to the blower housing and remove motor and mount. Remove the motor from the motor mount.

4. Install the new motor, reversing the removal procedure.

B. THERMOSTAT (NO BATTERIES REQUIRED)

1. Pull up from the bottom of the thermostat to remove it from the mounting sub-base, by gently prying up on the face plate in the slot at the base of the thermostat. Make sure small thermistor located in the bottom of the thermostat for temperature sensing, is not bent or damaged.

2. To remove the thermostat sub-base, remove the 2 mounting screws and the 3 wires (red/yellow/green or red/white black). Make sure the 3 wires do not fall into the cabinet. Install sub-base by reversing removal procedure.

C. CONDENSER ALARM LIGHT

To replace the Condensate Alarm Light, disconnect the wires from the lamp and bend the tinnerman clip retaining light and pull out. Install new light, reversing the procedure.

D. CONDENSATE PUMP

1. Remove brackets securing condensate pump in base pan, or condensate tank tray pan

2. Disconnect pump wire leads at Molex connectors. Remove retainer clamp and tubing.

3. Replace pump, install by reversing procedure.

E. HIGH PRESSURE SAFETY SWITCH

1. Remove cabinet right side panel, or right rear side panel of Model 60.

2. Remove flare nut that secures capillary to the refrigeration system high pressure side. A Schrader valve is located in the discharge port, and allows removal without losing the refrigerant charge.

3. Remove two screws that secure high pressure switch.

4. Disconnect wire leads from compressor contactor and condensate pump safety switch.

5. Install new High Pressure Control, reversing the procedure.

To gain access to compressor and compressor run capacitor, remove left hand side panel.

TROUBLESHOOTING GUIDE

The following steps and procedures are recommended for correcting the problems indicated. In the event that the problem can not be corrected, service may be required.

SERVICE SHOULD BE PERFORMED BY A QUALIFIED AIR CONDITIONING SERVICE TECHNICIAN

PROBLEM: UNIT DOES NOT POWER UP

CAUSE: Power interruption

REMEDY: Check LCDI (if equipped) and reset. Check external power supply making sure that the disconnect is ON. Check for blown fuses or tripped circuit breakers. Reset or replace (as needed).

PROBLEM: NO DISPLAY ON THERMOSTAT AFTER POWER "ON"

CAUSE: Loose display cable, faulty thermostat or transformer/contactor.
REMEDY: Check display cable, re-seat connectors. Thermostat may be defective...remove and replace. Check transformer and/or contactor(s)...remove and replace.

PROBLEM: EVAPORATOR FAN RUNS BUT COMPRESSOR DOES NOT START

CAUSE: Thermostat — set point is too high.
REMEDY: Make sure set-point is lower than room temperature. You should see a snowflake * designating that the thermostat is calling for cooling.

Note—there is a time delay for the compressor

CAUSE: Thermostat—Loose display cable
REMEDY: Examine the thermostat for a loose cable connection. Re-seat the display cable.

CAUSE: Condensate Alarm
REMEDY: Check condensate pump and make sure pump is working properly and that there is no kink in the drain line from the pump.

CAUSE: High Pressure Cut-Out. Inadequate/turned off condenser water supply.
REMEDY: Verify condenser water supply. Check High Pressure Cut-Out Switch. Press Reset (RED Button on back of unit). Re-start unit.

CAUSE: Supply Voltage. Check power supply for voltage outside the range of 106-126 volts on the 115 Volt units and 187-253 Volts on the 208/230 Volt units.
REMEDY: Have power checked by electrician and repaired.

CAUSE: Transformer shows open coil circuit failure.
REMEDY: Replace line voltage/low voltage transformer.

CAUSE: Compressor Contactor failure (3 and 5-ton units)
REMEDY: Replace compressor contactor.

PREVENTIVE MAINTENANCE

PWC Spot Coolers are designed to last a long time and to give maximum performance and reliability with minimum maintenance. To prolong the life of the unit, regular maintenance must be performed as specified below:

BLOWER MOTOR

The evaporator motor on all units have permanently lubricated bearings. No oiling is necessary

FILTERS

A clogged filter will cause the unit to operate at greatly reduced efficiencies. We recommend that the filter be inspected on a regular basis, **every six weeks or less ,** depending on the environment. The evaporator filter is located behind the return air grille and can be easily removed and cleaned. The filter must be washed periodically as needed by placing it in a dishwasher or soaking it in a solution of warm water and detergent for 10 minutes. Then rinsing them clean with hot water and shaking excess moisture from filter.

CONDENSATE PUMP

Condensate pumps come standard on all PWC models. When servicing pump follow these steps;

1. Make certain that the unit is disconnected from the power source before attempting to service or remove any component.

2. Be sure the floats move freely. Clean as necessary.

3. Remove the pump housing and check for obstructions. Clean as needed.

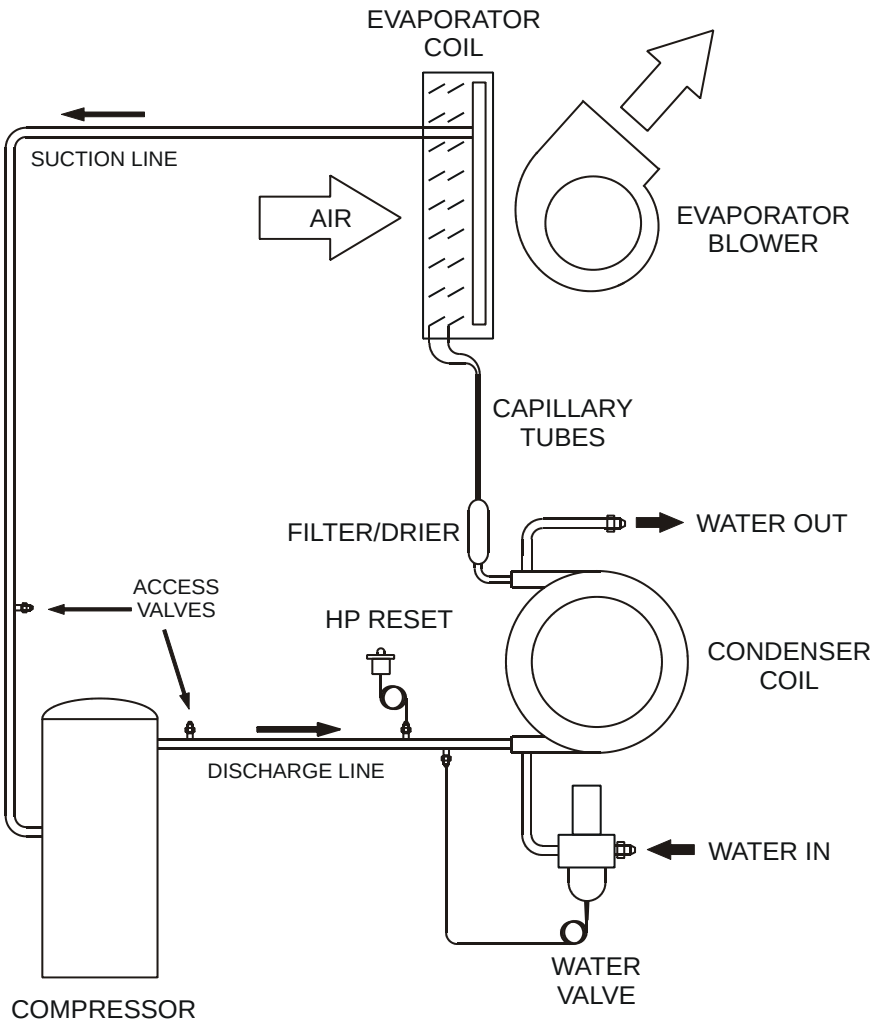
4. Clean the housing with warm water and mild soap when mineral deposits are visible.

5. Check the inlet and outlet piping. Clean as necessary. Be sure there are no kinks in the lines that would inhibit flow.

GENERAL

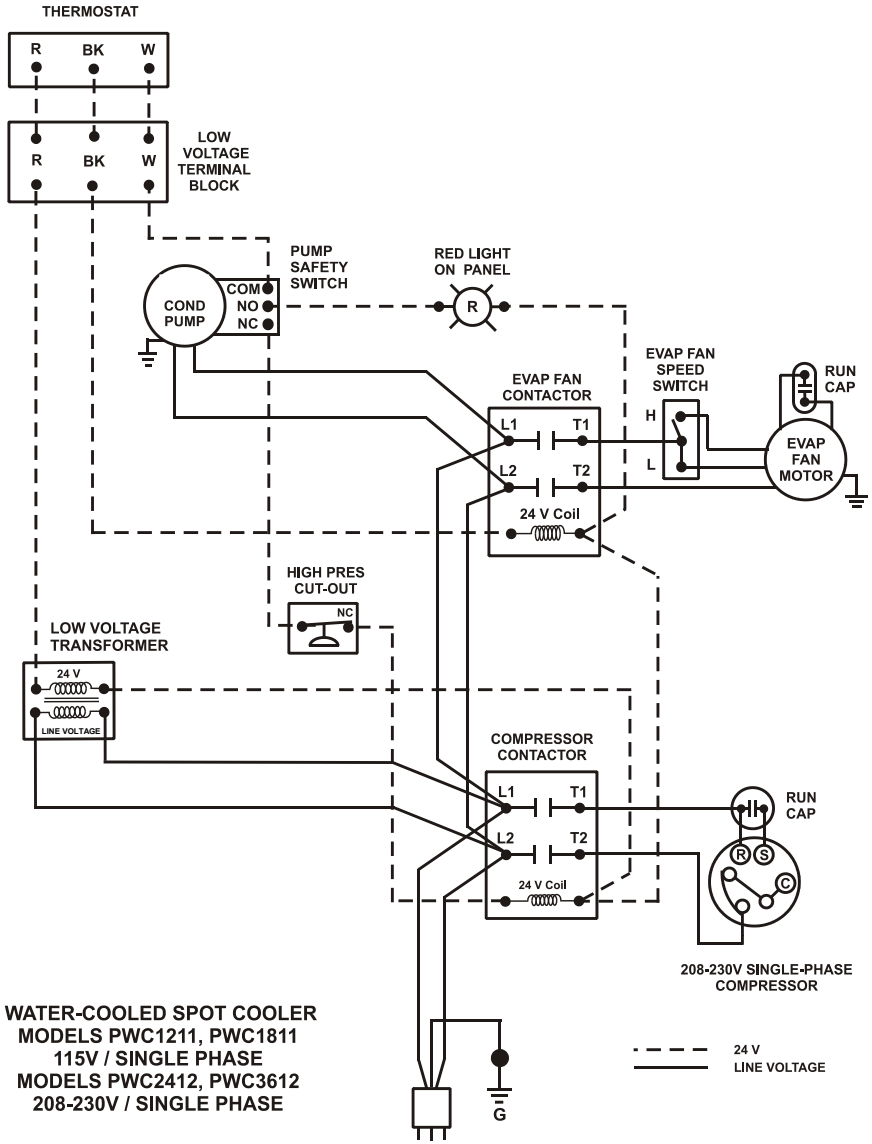
When necessary maintenance steps outlined above are followed, the air conditioner will provide long and reliable service. The refrigeration and electrical circuits of the system should only be serviced by a fully qualified service technician.

PIPING SCHEMATIC



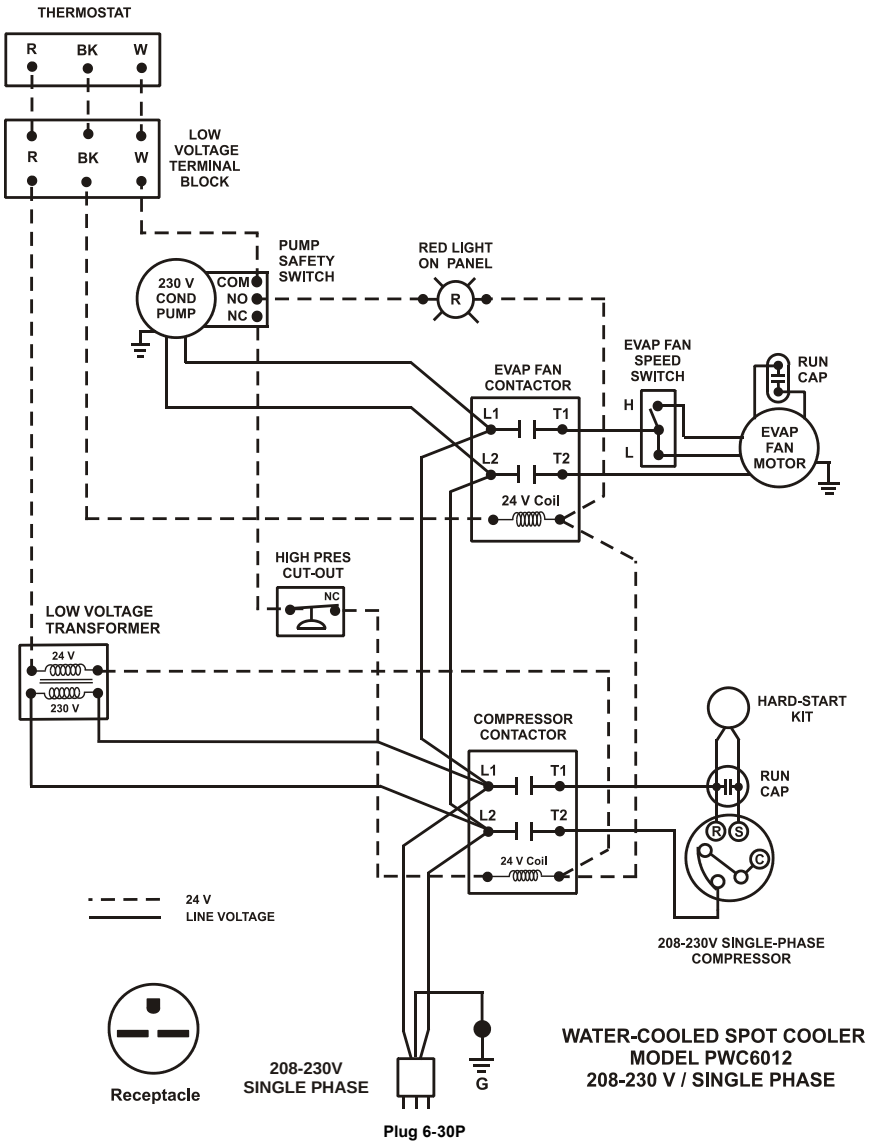
PIPING SCHEMATIC
Water-Cooled Spot Cooler

WIRING SCHEMATIC FOR PWC1211, PWC1811, PWC2412, and PWC3612



WATER-COOLED SPOT COOLER
MODELS PWC1211, PWC1811
115V / SINGLE PHASE
MODELS PWC2412, PWC3612
208-230V / SINGLE PHASE

WIRING SCHEMATIC FOR PWC6012



THREE PHASE MONITOR

Three-Phase units are equipped with monitors for motor protection. The OceanAire Three-phase Monitor safeguards the unit against incorrect compressor rotation, low-voltage and/or loss of power in any one of the power legs. The monitor is installed in the control box and is equipped with an LED for diagnosis of an improper electrical condition (see diagrams below). When power is connected, the compressor WILL NOT engage until the monitor start delay has timed out. If the thermostat does not power up, an electrical condition may need to be addressed. Remove the control box cover and observe the LED on the phase monitor. The LED signals the following:

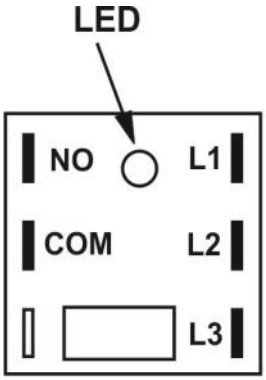
GREEN-BLINKING - Start delay, 120 sec.

GREEN - Proper Operation

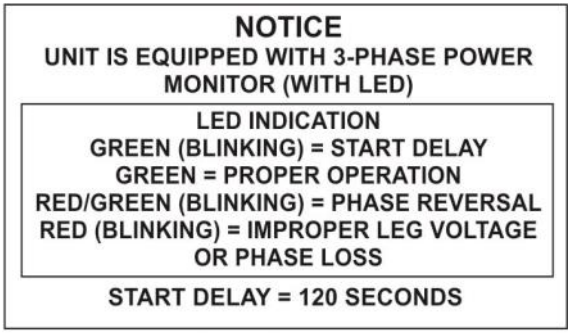
RED/GREEN-BLINKING - signals reverse phase rotation. Switch any two of the power leads for the unit, NOT THE MONITOR LEADS, and re-start.

RED-BLINKING - signals improper voltage and/or phase loss. Correct the power problem, then re-start the unit.

In the event of a power interruption, the unit will re-set to a start-up condition. The Phase Monitor will not allow the unit to start until power is corrected.

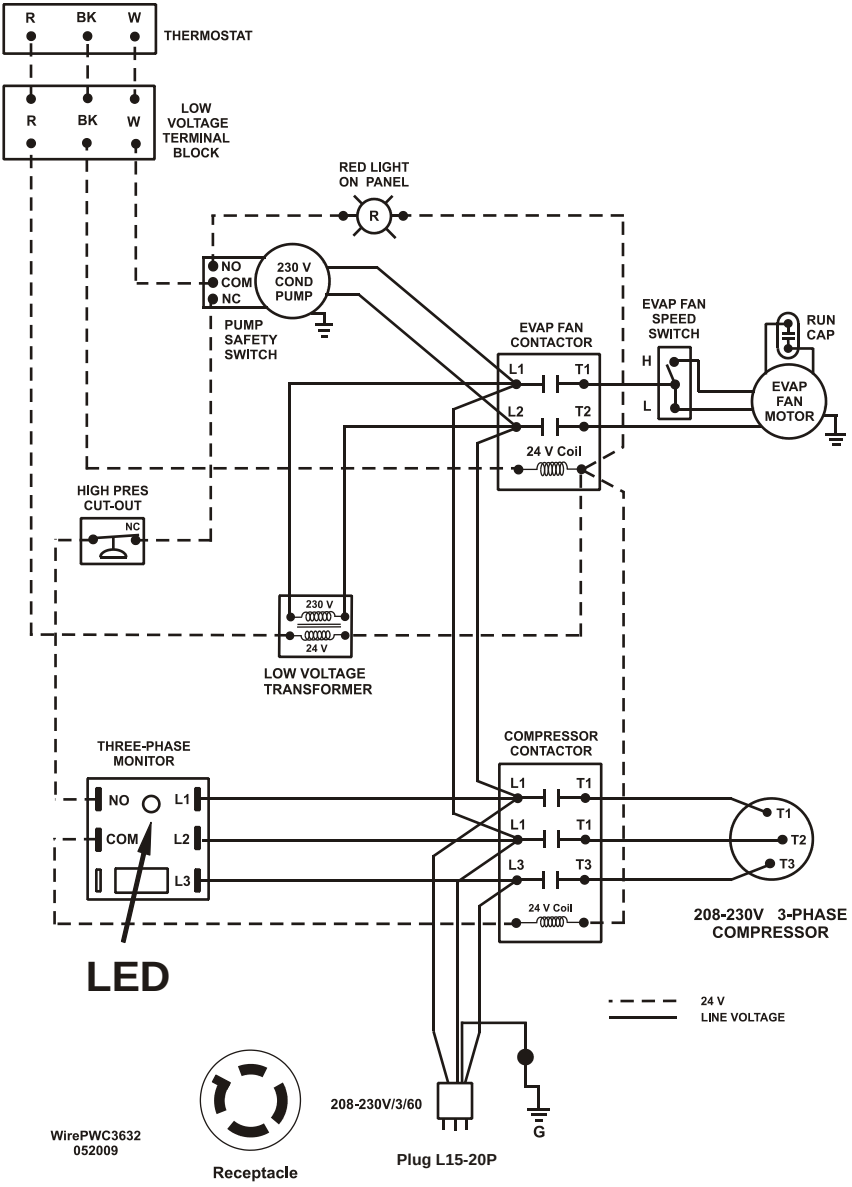


THREE-PHASE MONITOR

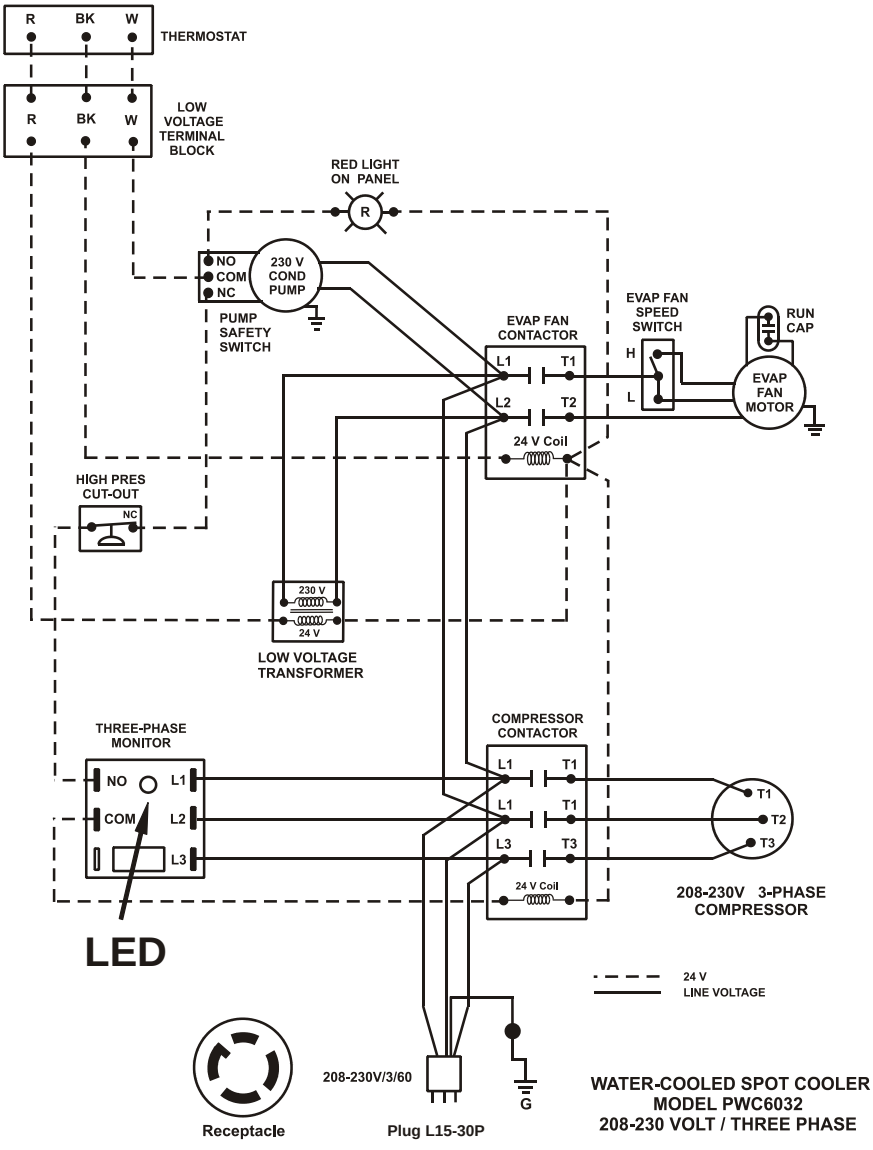

NOTICE
UNIT IS EQUIPPED WITH 3-PHASE POWER MONITOR (WITH LED)
LED INDICATION
GREEN (BLINKING) = START DELAY
GREEN = PROPER OPERATION
RED/GREEN (BLINKING) = PHASE REVERSAL
RED (BLINKING) = IMPROPER LEG VOLTAGE OR PHASE LOSS
START DELAY = 120 SECONDS

CONTROL BOX LABEL

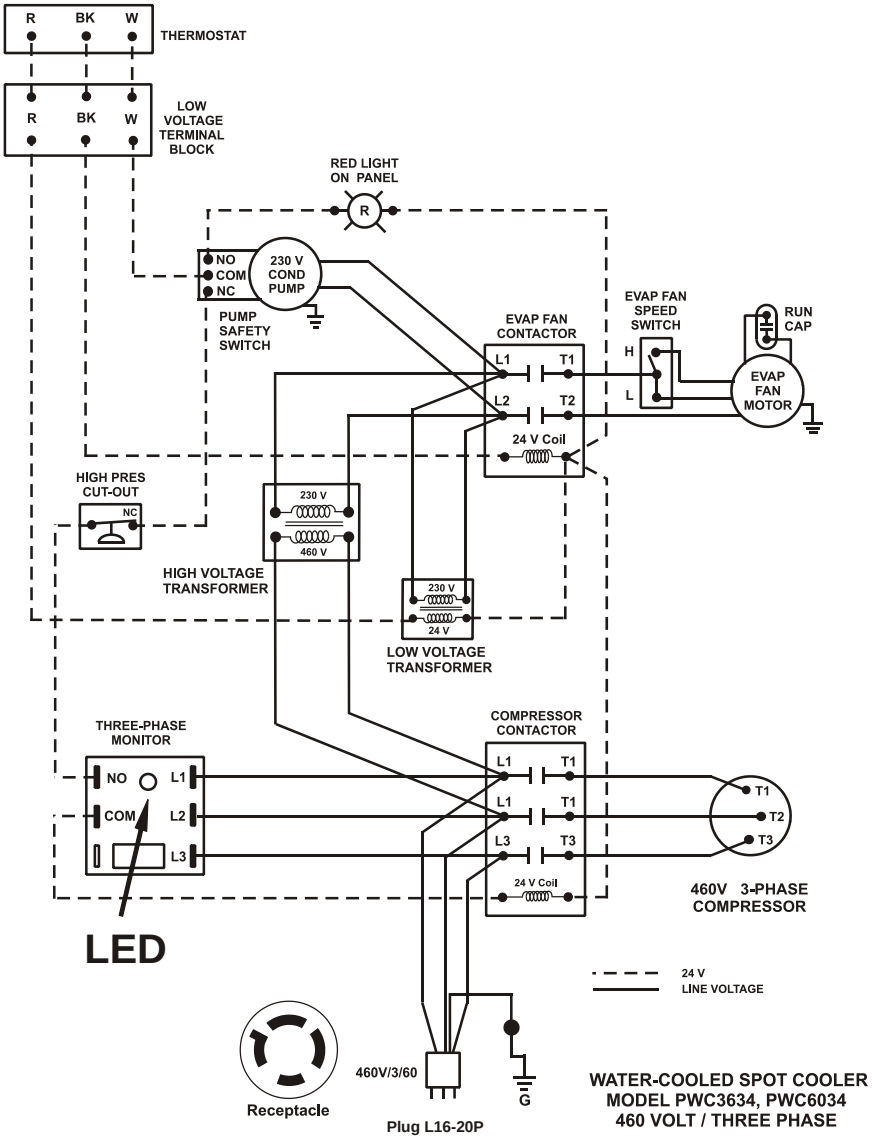
WIRING SCHEMATIC FOR PWC3632



WIRING SCHEMATIC FOR PWC6032



WIRING SCHEMATIC FOR PWC3634 and PWC6034



LIMITED WARRANTY

The Manufacturer (OceanAire, Inc.) warrants to the original owner that the Product will be free from defects in material or workmanship for a period not to exceed one (1) year from date of installation. If upon examination by the Manufacturer, the Product is shown to have a defect in material or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that part of the Product which is shown to be defective.

The Manufacturer further warrants that the product's compressor-motor will be free from defects in materials and workmanship for five (5) years from the date of installation.

If upon examination by the Manufacturer the Product is shown to have a defect in materials or workmanship during the warranty period, the Manufacturer will repair or replace, at its option, that Part of the Product which is shown to be defective. ***Compressor warranty shall be pro-rated for years 2 – 5 at the sole discretion of OceanAire***. Electrical parts such as relays, overloads, capacitors, etc., and the sealed refrigeration system (condenser and evaporator) are included in the one year limited warranty, but not with the five year limited warranty of the compressor.

This limited warranty does not apply to:

a) Product that has been subjected to misuse or neglect, has been accidentally or intentionally damaged, has not been installed, maintained or operated in accordance with the furnished written instructions, or has been altered or modified in any way.

b) Product that has been subjected to any abnormal power conditions such as loss of power, power surges, voltage irregularities such as brown-outs or phase loss on three-phase equipment).

c) any expenses, including labor or material, incurred during removal or reinstallation of the Product.

d) any workmanship of the installer of the Product.

This limited warranty is conditional upon:

a) return to the Manufacturer, of the part of the Product thought to be defective.

   Goods can only be returned with prior written approval from the Manufacturer. All returns must be freight prepaid.

b) determination in the reasonable opinion of the Manufacturer, that there exists a defective in material or workmanship.

Repair or replacement of any part under this Limited Warranty shall not extend the duration of the warranty with respect to such repaired or replaced part beyond the stated warranty period.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, AND ALL SUCH OTHER WARRANTIES, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED FROM THIS LIMITED WARRANTY. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE IN ANY WAY FOR ANY CONSEQUENTIAL, SPECIAL, OR INCIDENTAL DAMAGES OF ANY NATURE WHATSOEVER, OR FOR ANY AMOUNTS IN EXCESS OF THE SELLING PRICE OF THE PRODUCT OR ANY PARTS THEREOF FOUND TO BE DEFECTIVE. THIS LIMITED WARRANTY GIVES THE ORIGINAL OWNER OF THE PRODUCT SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY BY EACH JURISDICTION.

END USER INFORMATION

MODEL: _____

SERIAL NUMBER: _____

DATE PURCHASED: _____

INSTALLED BY: _____

DATE INSTALLED: _____

For Technical Support, or to locate a distributor for service parts, contact OceanAire at (847) 583-0311 or 1-866-GETAIRE (438-2473). Please indicate the Model Number and Serial Number of the unit to assure proper information and service parts.

TECH NOTES

OCEANAIRE

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web-site: www.oceanaire-inc.com e-mail: sales@oceanaire-inc.com